WHAT IS CLAIMED IS:

1. An electronic device comprising:
a first electrodes consisting of a metal oxide; and
a second electrode consisting of an aluminum alloy film, said second electrode being directly contacted and electrically connected to said first electrode,
wherein, in the contact interface between said aluminum alloy film and said first electrode, at least a part of alloy components constituting said aluminum alloy film exist as a precipitate or a concentrated layer.

2. The electronic device according to claim 1, wherein said aluminum alloy film contains at least one element in the range of 0.1 to 6 at% as its alloy component, the element being selected from the group consisting of Au, Ag, Zn, Cu, Ni, Sr, Sm, Ge, and Bi.

3. The electronic device according to claim 1, wherein said metal oxide is indium tin oxide or indium zinc oxide.

4. The electronic device according to claim 2, wherein said aluminum alloy film contains at least Ni as its alloy component.

5. The electronic device according to claim 2, wherein said aluminum alloy film further contains, as its another alloy

component, at least one element selected from the group consisting of Nd, Y, Fe, and Co in the range of 0.1 to 6 at%.

6. The electronic device according to claim 5, wherein the aluminum alloy film contains X_1 element wherein X_1 is at least one element selected from the group consisting of Ag, Zn, Cu and Ni and X_2 element wherein X_2 is at least one element selected from the group consisting of Nd and Y, and their contents satisfy the following formula (I):

$$0.2 \leq 0.5 \times CX_1 + CX_2 \leq 4.5 \cdots (I)$$

wherein $\mathbf{CX_1}$ represents the content (at%) of Ag, Zn, Cu, and Ni in the aluminum alloy, and $\mathbf{CX_2}$ represents the content (at%) of Nd and Y in the aluminum alloy.

7. The electronic device according to claim 5, wherein said aluminum alloy film contains Y_1 element wherein Y_1 is at least one element selected from the group consisting of Ag, Zn, Cu and Ni and Y_2 element wherein Y_2 is at least one element selected from the group consisting of Fe and Co, and their contents satisfy the following formula (II):

$$0.4 \leq CY_1 + CY_2 \leq 6 \cdots (II)$$

wherein $\mathbf{CY_1}$ represents the content of Ag, Zn, Cu, and Ni in the aluminum alloy (at%), and $\mathbf{CY_2}$ represents the content of

Fe and Co in the aluminum alloy (at%).

8. The electronic device according to claim 1, wherein said aluminum alloy film in which at least a part of the alloy components exist as a precipitate, and the electrical resistivity of said aluminum alloy film is not larger than 8 $\mu\Omega \cdot cm$.

9. The electronic device according to claim 1, wherein a particle of said precipitate has a size of more than 0.01 μm in major diameter and the number of the particle exceeds 0.13 particle/100 μm^2.

10. The electronic device according to claim 1, wherein the area factor of said precipitate exceeds 0.5 %.

11. The electronic device according to claim 4, wherein said aluminum alloy film containing Ni has a Ni-concentrated layer whose Ni content in a thickness region of 1 to 10 nm from the surface of said aluminum alloy film is not more than the Ni content inside the aluminum alloy film plus 8 at%.

12. The electronic device according to claim 4, wherein a particle of said precipitate has a size of more than 0.05 μm in major diameter and the number of the particle exceeds 21 particle/100 μm^2.

13. The electronic device according to claim 4, wherein said aluminum alloy film further contains Nd and a particle of said precipitate has a size of more than 0.02 μm in major diameter and the number of the particle exceeds 33 particle/100 μm^2.

14. The electronic device according to claim 4, wherein said aluminum alloy film further contains Nd and a particle of said precipitate has a size of more than 0.02 μm in major diameter and the number of the particle exceeds 33 particle/100 μm^2.

15. The electronic device according to claim 1, wherein said electronic device comprises a thin film transistor arranged on a glass substrate and said thin film transistor is electrically connected to said first electrode through said aluminum alloy film.

16. The electronic device according to claim 1, wherein said first electrode is a pixel electrode and said electronic device is a display device.

17. The method of manufacture of the electronic device according to claim 1, comprising the step of forming a precipitate that contains at least a part of the alloy components contained in said aluminum alloy film by heating said aluminum alloy film formed on a substrate at a temperature of 150 to 400°C.

18. The method of manufacture according to claim 17, wherein said aluminum alloy film is formed by a sputtering method.

19. The method of manufacture of the electronic device according to claim 1, comprising the steps of:
forming said aluminum alloy film on a substrate;
forming an insulating film on said aluminum alloy film;
processing the insulating film by hole etching; and
etching said aluminum alloy film by 1 to 200 nm from the surface thereof successively after the hole etching, whereby a precipitate containing at least a part of the alloy components contained in said aluminum alloy film is exposed partially.

20. The method of manufacture according to claim 19, wherein the etching is performed by dry etching using a gas capable of etching said aluminum alloy film.

21. The method of manufacture according to claim 19, wherein the etching is performed by wet etching using a chemical capable of etching said aluminum alloy film.

22. The method of manufacture according to claim 19, wherein a photoresist stripper including not less than 5 wt% amine compound is used in cleaning of the aluminum alloy film after the etching.

23. An electronic device comprising:

a first electrodes consisting of a metal oxide; and
a second electrode consisting of an aluminum alloy film containing 0.1 to 6 at% of Sm, said second electrode being directly contacted and electrically connected to said first electrode,
wherein, in the contact interface between said aluminum alloy film and said first electrode, Sm in said aluminum alloy film and an element constituting said metal oxide of said first electrode diffuse each other to form a diffusion layer.

24. A sputtering target consisting of an aluminum alloy, said aluminum alloy including at least one element selected from the group consisting of Ag, Zn, Cu, and Ni as an alloy component in the range of 0.1 to 6 at% and at least one element selected from the group consisting of Nd, Y, Fe, and Co in the range of 0.1 to 6 at%.

25. An electronic device comprising:
a first electrodes consisting of a metal oxide; and
a second electrode consisting of an aluminum alloy film containing at least one element in the range of 0.1 to 6 at% as its alloy component, the element being selected from the group consisting of Au, Ag, Zn, Cu, Ni, Sr, Sm, Ge, and Bi, said second electrode being directly contacted and electrically connected to said first electrode,
wherein said second electrode is heated at 150 to 400°C after the formation thereof.